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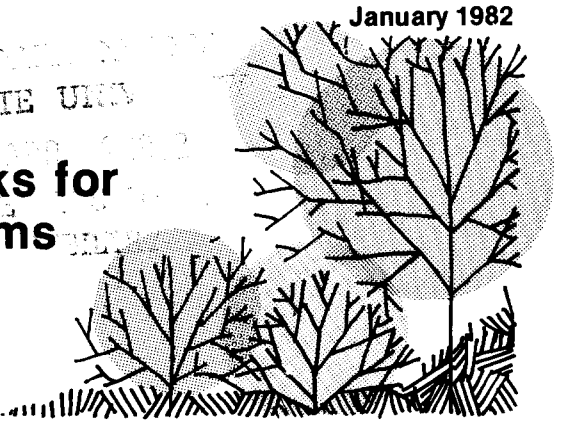

Using Old Windbreaks for Outdoor Classrooms

ROBERT HEINTZ
Extension Forester

WHAT CONSTITUTES AN OUTDOOR CLASSROOM

Areas that contain trees and shrubs, grasses, sedges, rushes, forbs, birds, mammals, insects, other animals, rocks and water, and aquatic plants and animals makes an ideal outdoor study area. Unfortunately, few areas contain all of these features. However, old multirow windbreaks contain many plants and animals and can usually be found a short distance from most schools.

A common question is what needs to be done to make an area suitable for an outdoor classroom. The answer, of course, is nothing! Do not spoil an outdoor classroom by cutting weeds, trees or shrubs, removing downed trees, raking or cleaning dead material from the area. The exception would be to remove wire, old machinery and old buildings that pose a safety problem. Also make sure old dug wells and cisterns are filled in.

OUTDOOR CURRICULUM IDEAS

The following ideas are listed by subject matter. These ideas are intended to stimulate teachers in various subject areas toward using the outdoors as a classroom. Teachers, as they become more familiar with a particular outdoor study area, will be able to expand on these ideas.

ART

Find, explain and sketch the various art forms found in nature.

Make a collage with natural litter from the forest floor.

Create an art object using natural materials found in the area such as an old piece of bark (do not remove from live trees) and dried leaves, fruit, moss, grass, rocks, etc. Make a winter bouquet from dried plant material.

Make a drawing in the field using all natural materials such as charcoal from a fireplace for black, rotten wood for shades of brown, various leaves for green, dandelion flowers for yellow and other stems, leaves, flowers, and berries for their various colors.

Pencil sketching, painting, and photographing natural scenes or objects.

ENGLISH

Have students look for natural objects of their choice and write short compositions about their finds. The entire class could write about the same object, such as a leaf or a tree stump, enabling the students to compare descriptive phrases.

While in an outdoor setting, read aloud certain preselected passages from the works of Henry David Thoreau, Aldo Leopold, Sigrud Olson, or other philosopher naturalists, and have the students discuss the author's feelings. For a good oral or written exercise, have the students determine why the author took the time to write such a passage.

Have the students sit quietly and write about some natural sound — wind through the trees, a bird, a cricket, or running water as examples.

Students could write about something they touched or felt while blindfolded, or try to describe the odor of a wild flower or crushed leaf.

HISTORY

Determine the history of the outdoor classroom. If the area is an old farmstead shelterbelt, determine its age from tree rings. Do not cut a tree; have a forester use an increment borer to remove a strawlike core of wood for this exercise. If in a natural area, have one of the older trees bored and relate the country's history to the size of the tree. Example — If the age is determined to be 200 years old, what was happening in history when this tree was a seedling? What was happening to this country when the tree was 2 inches in diameter? Determine the tree's age by counting the rings from the pith out toward the bark for a distance of 1 inch which is the radius of a circle or equivalent to 2 inches in diameter. What size was the tree when the Civil War started? If the tree is much younger, say 40 years, have the students relate events since then to the

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history of the community or school.

Note: The first ring inside the bark is the current year's growth.

They don't know the names of the various plants but they have found a change in the vegetation as they progress up the hill. Some plants need more moisture than others.

HOME ECONOMICS

Have students assemble backpacking foods from a local supermarket and repack in meal size packages with cooking instructions. Breakfast, lunch and dinner menues that are both filling and nutritious should be planned. Meals could be cooked in the outdoors using such fuels as wood, charcoal and the camping type liquid fuel stoves.

Trail snacks, called gorp, are expensive to buy but easily made of dried fruits, various nuts and seeds, candy (M & M's), cracker pieces and cereal.

MATH

Have students measure the circumference of a tree with a length of string, then measure the string with a yardstick. With the circumference measurement, calculate the diameter of the tree.

Students can determine the height of a tree or width of a river by measuring angles and a base line.

Lay out an acre or hectare of land.

Have students measure the shelterbelt area to determine its size in acres or hectares.

Have students find their way to a certain place by pacing and using a compass.

Have students make a map of part of the area showing important features using a compass, tape measure, ruler and protractor.

MUSIC

Great works of music have been composed by man to recreate the sounds of nature. After an outdoor experience of listening to natural sounds, students could listen to selected recordings to identify such sounds.

The following selections are examples.[1/]

Primary grade selections:
Schumann—Happy Farmer
Schubert—The Bee
Mozart—Eine Klein Nachtmusik (A Little Night Music)
Eugene Zador—Children's Symphony, 4th Movement, "The Farm"

Intermediate grade selections:
Saint-Saëns—Carnival of the Animals
Virgil Thompson—Cattle
Aaron Copland—Rodeo
Handel—Water Music
Debussy—Play of the Waves (Jeux d' eau)

Junior high selections:
Debussy—Afternoon of a Faun (L'Apres-midi d'un faune)
Debussy—The Sea (La Mer)
MacDowell—Woodland Sketches
Grofe—Grand Canyon Suite
Grofe—Desert Water Hole

Senior high selections:
Vivaldi—The Seasons
Holst—The Planets
Mussorgsky—Night on Bald Mountain
Respigi—The Pines of Rome
Milhaud—Creation of the World

A portable tape recorder could capture such natural sounds as:

Early morning bird calls.
The chirp or short screech of the prairie dog.
Wind as it rustles grass or leaves or whistles through a pine tree.
Thunder, rain, the splash of waves on the shore of a lake.
The night sounds of insects, frogs, and coyotes.

With proper editing, such sounds could be used to assemble nature's own "Dawn to Dusk" Symphony.

SCIENCE

Questions to ask to involve the students. How many animal signs or homes can you find? Can you see any animals in the area? What do the various animals do here? What do they eat? Where do they spend the winter?

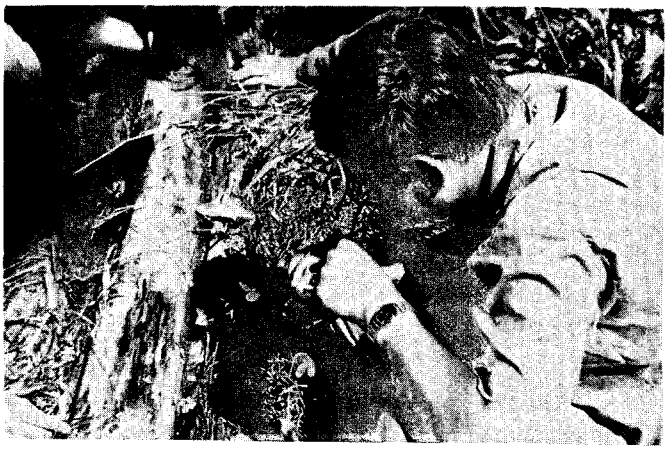
How many bird nests can you find? What do the various birds eat? How do the birds help the farmer? Collect as many feathers as you can. Can you match the feather to a bird?

[1/] Assembled by Mrs. John Trautwein, Assistant Professor—Music, NDSU, Fargo, North Dakota.

Look at just one plant and count the different insects you find. What are the insects doing on the plant? Do some insects live in certain places? How do insects hide from their enemies? Are there insects in a rotten log? What are they doing in the log? Follow an ant to its home. What are the ants doing?

How many different trees and shrubs can you find? Forbs? Herbs? Grasses? Rushes? Are some plants dying? Why? With a small leafed branch from two different trees, have the students compare and list the differences. Can they find the same type of tree and report its identifying features, i.e., shape, bark texture, leaf shapes and arrangement, etc.? Have students list every living thing they can find and name them. Study the life in a rotten log, on a live tree or in a shovel full of top soil.

Teachers of high school biology can use the area for identification of various plants and animals.



Young people are fascinated by the life in and around a rotting log.

SOCIAL STUDIES

Begin with a discussion on why these trees are here. Some questions that might help in getting the discussion going are: Who planted these trees? Where were the people from? Why were they planted? What effects could these trees have on the people that planted them?

Write a conservation plan for an adjoining farm. Such a plan could include:

Tree Planting for wind protection
Wildlife enhancement (food, shelter, water)
Converting sandy-type fields to grass
Strip cropping
Grassed waterways

Discuss how the conservation activity will effect:

The landowner
The school's outdoor classroom
Other neighbors
The urban population (town people)

Determine who will pay for the work and why. Remember the landowner is giving up valuable land for the project.

Simulation Game—Your community has been approached to sell the outdoor classroom area. The proposed buyer wishes to start an auto wrecking business. The town seems to be split as to its use; half the people think it's worth more as a study area, the other half contend that a new business would help the town's economy. Have half the class represent one group, the other half the other group. Have them debate the problem.

VOCATIONAL STUDIES

Have the students erect bird houses and feeders that were built in class. Filling bird feeders could be rotated among classes; however, extreme caution should be exercised in that once feeding starts, it should be continued **all** winter or until the ground is bare of snow. Distance to the outdoor classroom may deem it impractical to install a bird feeder at that location. As an alternative install the feeder on the school grounds or at a nursing home or senior citizen center.

Students could collect materials for shop projects. Benches and picnic tables, trash containers and holders could be built and installed in permanent study areas. Have students work with the county engineer to install culverts and an approach from a road. The construction of a fireplace, comfort station and parking area are worthwhile and useful projects.

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